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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BEAMER, TEMICA M

ART UNIT

PAPER NUMBER

2681

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/746,207	Applicant(s) MOON ET AL.	
	Examiner Temica M. Beamer	Art Unit 2681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-18, 20-33 and 35-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 8/24/2004 with respect to claims 1, 2, 4, 6, 7, 9-16, 18, 20-23, 25-31, 33, 35 and 37-42 have been fully considered but they are not persuasive.

Regarding claims 1, 14, 30 and 42, applicant argues that Toh fails to disclose using a different wireless communication protocol than a wireless communication link of one or more of the other communication paths.

The examiner, however, disagrees. The examiner previously cited col. 18, lines 31-47 which reads on the above limitation. This is evidenced by the fact that mobile-to-mobile communications via an ad-hoc protocol can be used in addition to a "mobile-to-BS" protocol. In the latter embodiment, such a protocol is used when a wireless device desires communication with a wireless local area network device. Therefore, Toh does disclose wherein different wireless protocols are used.

Regarding claims 2, 15 and 31, applicant argues that Toh fails to disclose measuring the link quality of the link immediately before routing the communication. The examiner, however, contends that such a limitation is inherent in Toh as evidenced by the fact that such information is known right before the communication is sent because the link quality will change as time passes. The examiner should have further cited col. 10, line 21-col. 11, line 10 which further reads on the limitations of claims 2, 15 and 31.

Regarding claims 4, 18 and 33, applicant argues that Toh fails to disclose measuring the link quality using a control channel. The examiner, however, disagrees. Toh discloses that the link quality is measured using a control channel as evidenced by the fact that such information (measured link quality) is transmitted in a BQ "control packet" (col. 8, line 59-col. 9, line 13). Hence, the medium the control packet is transmitted is a control channel.

2. Applicant's arguments, see pages 14 - 16, filed 1/23/2004, with respect to the rejection(s) of claim(s) 3, 17 and 32 and claims 8, 24 and 36, under 102 (Toh) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the combination of Toh and Arslan et al (Arslan), U.S. Patent No. 6,574,235 for claims 3, 17 and 32. For claims 8, 24 and 36, the combination of Toh and Lee et al (Lee), U.S. Patent No. 6,329,902 is used. See the rejection as set forth below.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 4, 6, 7, 9-16, 18, 20-23, 25-31, 33, 35 and 37-42 are rejected under 35 U.S.C. 102(e) as being anticipated by Toh, U.S. Patent No. 5,987,011.

Regarding claims 1, 14, 30 and 42, Toh discloses routing communications at a mobile station, comprising: at a mobile station, determining one or more routing metrics associated with each of a plurality of communication paths coupling the mobile station and a destination device (col. 6, lines 48-60, col. 7, lines 42-50, col. 17, line 58-col. 18, line 5), wherein at least one of the routing metrics comprises the link quality of at least one wireless communication link included in each of the communication paths (col. 3, lines 39-56); at the mobile station, receiving routing information from one or more routers coupling the mobile station and the destination device (col. 3, line 57-col. 4, line 10); and routing a communication to the destination device based on the determined routing metrics and the received routing information (col. 9, line 14-col. 10, line 20).

Regarding claims 2, 15 and 31, Toh discloses the invention of Claims 1, 14 and 30 wherein determining the link quality of the wireless communication link comprises measuring the link quality of the wireless communication links immediately before routing the communication (col. 9, lines 14-21).

Regarding claims 4, 18 and 33, Toh discloses the invention of Claims 1, 14 and 30, wherein determining the link quality of the wireless communication link comprises measuring the link quality using a control channel established with a device with which the wireless communication link is to be established (col. 7, lines 41-50).

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Regarding claims 5, 19 and 34, Toh discloses the invention of Claims 1, 14 and 30, wherein at least two of the communication paths include wireless communication links using different wireless communication protocols (col. 18, lines 31-47).

Regarding claims 6, 20 and 35, Toh discloses the invention of Claims 5, 19 and 34, wherein at least one of the wireless communication protocols is not a cellular telephone communication protocol (col. 6, lines 7-11).

Regarding claim 7, Toh discloses the invention of Claim 1, wherein routing the communication comprises transmitting the communication from the mobile station using inherently a wireless communication interface of the mobile station (col. 9, line 14-col. 10, line 20).

Regarding claims 9, 25 and 37, Toh discloses the invention of Claims 1, 14 and 30, wherein the communication comprises a packet-based communication (col. 7, lines 51-55).

Regarding claims 10, 26 and 38, Toh discloses the invention of Claims 1, 14 and 30, wherein the communication comprises a circuit-switched communication (col. 18, lines 31-47).

Regarding claims 11, 27 and 39, Toh discloses the invention of Claims 1, 14 and 30, wherein the routing information received at the mobile station comprises network topology information (col. 2, lines 49-53).

Regarding claims 12, 28 and 40, Toh discloses the invention of Claims 1, 14 and 30, wherein the routing information received at the mobile station comprises a routing table or a portion of a routing table (col. 13, lines 2-8).

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Regarding claims 13, 29 and 41, Toh discloses the invention of Claims 1, 14 and 30, further comprising communicating routing information from the mobile station to one or more of the routers coupling the mobile station and the destination device to enable the routers to transmit communications from the destination device to the mobile station (col. 3, line 65-col. 4, line 10).

Regarding claim 16, Toh discloses the invention of Claim 14, wherein the router receives link quality information from another component of the mobile station (col. 17, line 58-col. 18, line 5).

Regarding claim 21, Toh discloses the invention of Claim 14, wherein the router is further operable to determine at least a portion of one or more communication paths available between the mobile station and the destination device by receiving information about the availability of one or more communication links from one or more routers external to the mobile station (col. 18, lines 6-30).

Regarding claim 22, Toh discloses the invention of Claim 21, wherein the router is further operable to determine at least a portion of one or more communication paths available between the mobile station and the destination device by receiving information about the availability of one or more communication links from one or more routers external to the mobile station (col. 8, lines 6-30).

Regarding claim 23, Toh discloses the invention of Claim 14, wherein routing the communication comprises transmitting the communication to one of the wireless communication interfaces (col. 9, line 14-col. 10, line 20).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 17 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toh in view of Arslan.

Regarding claims 3, 17 and 32, Toh discloses the invention of Claims 1, 14 and 30 as described above. Toh, however, fails to disclose wherein determining the link quality of the wireless communication link comprises measuring the bit error rate of the wireless communication link.

In a similar field of endeavor, Arslan discloses methods of receiving co-channel signals by channel separation and successive cancellation and related receivers.

Arslan further discloses determining the accuracy of sequenced information by using BER (col. 11, lines 49-54).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Toh with the teachings of Arslan for the purpose of ensuring the accuracy of transmitted/received information.

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7. Claims 8, 24 and 36 rejected under 35 U.S.C. 103(a) as being unpatentable over Toh in view of Lee.

Regarding claims 8, 24 and 36, Toh discloses the invention of Claims 1, 14 and 30 as described above. Toh, however, fails to disclose wherein at least one of metrics comprises the power requirements of at least one wireless communication link included in each of the communication paths.

In a similar field of endeavor, Lee discloses wide area two-way paging using a mesh network with paging receivers.

Lee further discloses power requirements of at least one wireless communication link included in communication paths (col. 5, lines 45-58).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify Toh with the teachings of Lee for the purpose of ensuring that enough power is available to complete a communication.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Temica M. Beamer whose telephone number is (703) 306-5837. The examiner can normally be reached on Monday-Thursday (alternate Fridays) 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (703) 308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, reading "Temica M. Beamer". The signature is fluid and cursive, with the first name "Temica" and last name "Beamer" clearly legible, and "M." as a middle initial.

Temica M. Beamer
Primary Examiner
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December 23, 2004